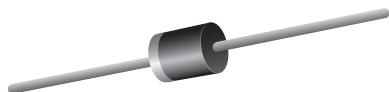


## High Current Axial Plastic Rectifier


**P600**

### FEATURES

- Low forward voltage drop
- Low leakage current,  $I_R$  less than 0.1  $\mu$ A
- High forward current capability
- High forward surge capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

### TYPICAL APPLICATIONS

For use in general purpose rectification of power supplies, inverters, converters, and freewheeling diodes application.

#### Note

- These devices are not AEC-Q101 qualified.

### MECHANICAL DATA

**Case:** P600, void-free molded epoxy body  
Molding compound meets UL 94 V-0 flammability rating  
Base P/N-E3 - RoHS-compliant, commercial grade

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test

**Polarity:** Color band denotes cathode end

| PRIMARY CHARACTERISTICS |                                         |
|-------------------------|-----------------------------------------|
| $I_{F(AV)}$             | 6.0 A                                   |
| $V_{RRM}$               | 50 V, 100 V, 200 V, 400 V, 600 V, 800 V |
| $I_{FSM}$               | 400 A                                   |
| $I_R$                   | 5.0 $\mu$ A                             |
| $V_F$                   | 0.9 V, 0.95 V                           |
| $T_J$ max.              | 150 °C                                  |
| Package                 | P600                                    |
| Diode variations        | Single die                              |

| MAXIMUM RATINGS (T <sub>A</sub> = 25 °C unless otherwise noted)                    |                                                              |                                   |               |       |       |       |       |       |      |
|------------------------------------------------------------------------------------|--------------------------------------------------------------|-----------------------------------|---------------|-------|-------|-------|-------|-------|------|
| PARAMETER                                                                          |                                                              | SYMBOL                            | GI750         | GI751 | GI752 | GI754 | GI756 | GI758 | UNIT |
| Maximum repetitive peak reverse voltage                                            |                                                              | V <sub>RRM</sub>                  | 50            | 100   | 200   | 400   | 600   | 800   | V    |
| Maximum RMS voltage                                                                |                                                              | V <sub>RMS</sub>                  | 35            | 70    | 140   | 280   | 420   | 560   | V    |
| Maximum DC blocking voltage                                                        |                                                              | V <sub>DC</sub>                   | 50            | 100   | 200   | 400   | 600   | 800   | V    |
| Maximum non-repetitive peak reverse voltage                                        |                                                              | V <sub>RSM</sub>                  | 60            | 120   | 240   | 480   | 720   | 1200  | V    |
| Maximum average forward rectified current at                                       | T <sub>A</sub> =60 °C, PCB mounting (fig. 1)                 | I <sub>F(AV)</sub>                | 6.0           |       |       |       |       |       | A    |
|                                                                                    | T <sub>L</sub> = 60 °C,0.125" (3.18 mm) lead length (fig. 2) |                                   | 22            |       |       |       |       |       |      |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load |                                                              | I <sub>FSM</sub>                  | 400           |       |       |       |       |       | A    |
| Operating junction and storage temperature range                                   |                                                              | T <sub>J</sub> , T <sub>STG</sub> | - 50 to + 150 |       |       |       |       |       | °C   |

| ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted) |                                                                          |                         |                 |       |       |       |       |       |       |      |
|----------------------------------------------------------------------------|--------------------------------------------------------------------------|-------------------------|-----------------|-------|-------|-------|-------|-------|-------|------|
| PARAMETER                                                                  | TEST CONDITIONS                                                          |                         | SYMBOL          | GI750 | GI751 | GI752 | GI754 | GI756 | GI758 | UNIT |
| Maximum instantaneous forward voltage at                                   | 6.0 A                                                                    |                         | V <sub>F</sub>  | 0.90  |       |       |       |       | 0.95  | V    |
|                                                                            | 100 A                                                                    |                         |                 | 1.25  |       |       |       |       | 1.30  |      |
| Maximum DC reverse current at rated DC blocking voltage                    |                                                                          | T <sub>A</sub> = 25 °C  | I <sub>R</sub>  | 5.0   |       |       |       |       |       | μA   |
|                                                                            |                                                                          | T <sub>A</sub> = 100 °C |                 | 1.0   |       |       |       |       |       | mA   |
| Typical reverse recovery time                                              | I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25 A |                         | t <sub>rr</sub> | 2.5   |       |       |       |       |       | μs   |
| Typical junction capacitance                                               | 4.0 V, 1 MHz                                                             |                         | C <sub>J</sub>  | 150   |       |       |       |       |       | pF   |



## THERMAL CHARACTERISTICS ( $T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

| PARAMETER                  | SYMBOL                          | GI750 | GI751 | GI752 | GI754 | GI756 | GI758 | UNIT |
|----------------------------|---------------------------------|-------|-------|-------|-------|-------|-------|------|
| Typical thermal resistance | R <sub>θJA</sub> <sup>(1)</sup> | 20    |       |       |       |       |       | °C/W |
|                            | R <sub>θJL</sub> <sup>(1)</sup> | 4.0   |       |       |       |       |       |      |

### Note

(1) Thermal resistance from junction to ambient and from junction to lead at 0.375" (9.5 mm) lead length, PCB mounted with 1.1" x 1.1" (30 mm x 30 mm) copper pads

## ORDERING INFORMATION (Example)

| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE                    |
|---------------|-----------------|------------------------|---------------|----------------------------------|
| GI756-E3/54   | 2.1             | 54                     | 800           | 13" diameter paper tape and reel |
| GI756-E3/73   | 2.1             | 73                     | 300           | Ammo pack packaging              |

## RATINGS AND CHARACTERISTICS CURVES ( $T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

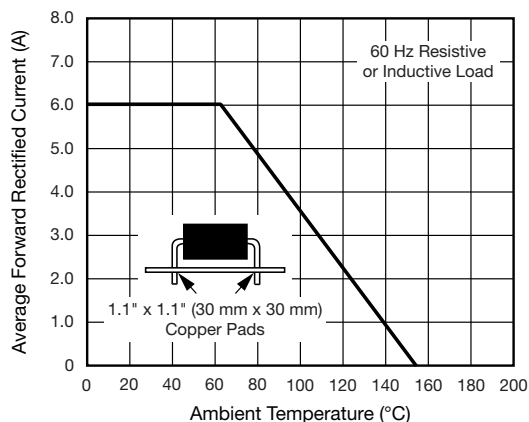


Fig. 1 - Maximum Forward Current Derating Curve

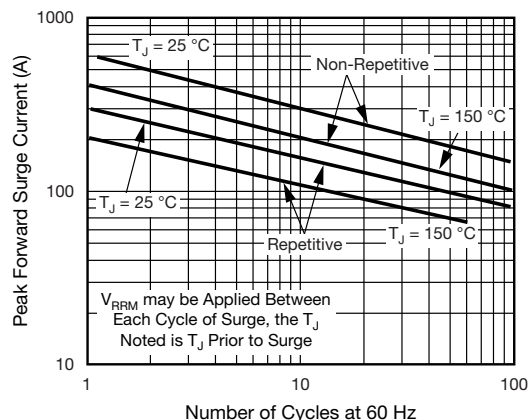


Fig. 3 - Maximum Peak Forward Surge Current

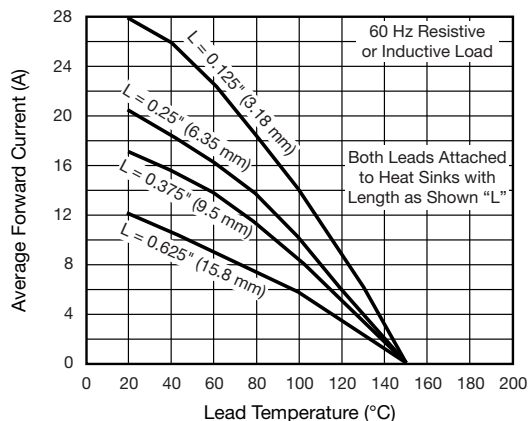


Fig. 2 - Maximum Forward Current Derating Curve

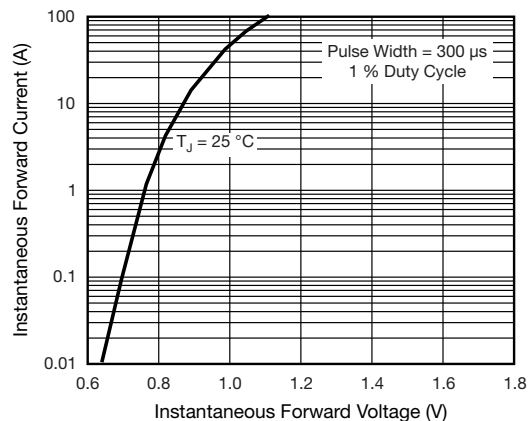


Fig. 4 - Typical Instantaneous Forward Characteristics

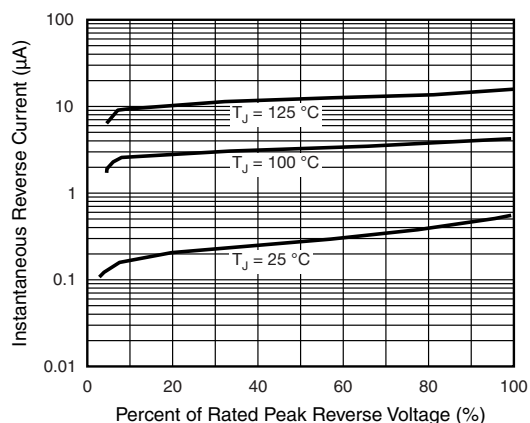


Fig. 5 - Typical Reverse Characteristics

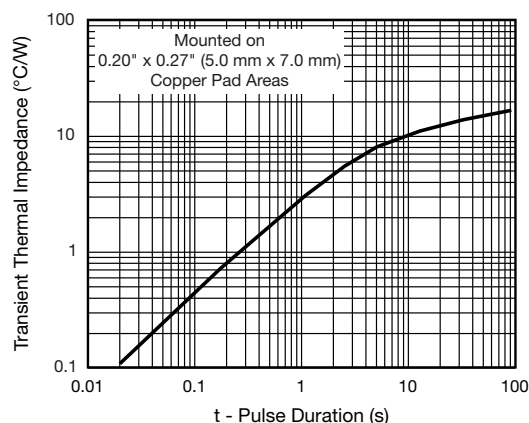
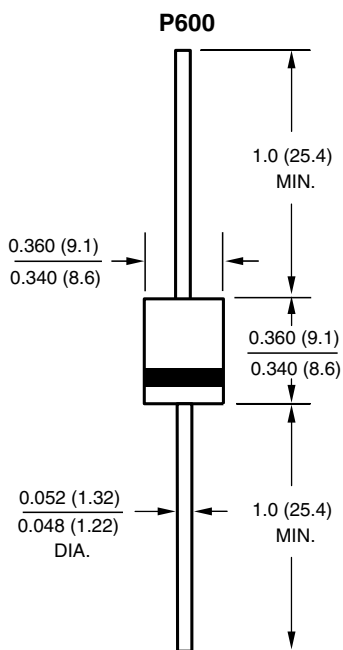


Fig. 6 - Typical Transient Thermal Impedance

**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)




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